

MASS. GOV. PA 11/2: F49



Commonwealth of Massachusetts

HOUSE OF REPRESENTATIVES



HOUSE POST AUDIT
AND
OVERSIGHT BUREAU

ROOM 146

• STATE HOUSE •

BOSTON, MASSACHUSETTS 02133-1053

FINANCING THE CA/T

'No Free Lunches'

June, 1995

GOVERNMENT DOCUMENTS
COLLECTION

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Summary

- Under even the most optimistic forecasts, additional funds in excess of those already identified will be needed to construct, operate and maintain the facilities of the CA/THT. The Bureau believes that funding options are limited and that the Administration must propose adequate sources of funds to finish and maintain the project.
- Current cost estimates for the project do not include all cost elements reasonably associated with the project. Reasonable estimates of all known costs should be made so that decisionmakers can consider all legitimate options.
- Total project maintenance costs have yet to be identified and have in large part been absent from the discussions about funding all components of the project.
- Project maintenance and operations costs are substantial. Current estimates of operation and maintenance of the third harbor tunnel are in excess of \$10 million. These costs will be incurred annually and have yet to be linked with a specific funding source. The Bureau finds that gross toll revenues for all tunnels will remain approximately the same. The cost of operation of the Sumner and Callahan tunnels was \$9.1 million in 1994.
- The estimates of total maintenance of the Turnpike extension, all tunnels and the artery are substantial and need to be addressed in a comprehensive fashion.
- The project's arbitrary commitment to a fixed cost ceiling serves no valid public purpose. The Bureau believes that project consultants may be cutting costs in the wrong areas in order to avoid the unpopular step of raising the cost estimate even further. The Bureau believes that rather than eliminating ramps or other significant mitigation features, MHD should examine administrative costs and other documented areas of waste and inefficiency.
- The Bureau believes that a renewed commitment to the Value Engineering process is critical to the cost control process.

Introduction

As part of its review of the Central Artery/Third Harbor Tunnel Project ("CA/THT"), the House Post Audit and Oversight Bureau examined on a preliminary basis issues related to funding the construction, operation and maintenance of the CA/THT project. The Bureau believes that there are a number of issues and options that confront the Legislature and the Administration as they wrestle with possible solutions to funding the remaining costs, including the maintenance, and operation of the facilities of the CA/THT project.

The Bureau believes that the maintenance funding issues and ultimate project cost remain unresolved. Moreover, maintenance cost issues are substantial and have, in large part, been absent from discussions on project costs. The Bureau is currently reviewing maintenance cost issues for the following reasons:

1. Maintenance and operational costs of the CAT/THT will be substantial and in addition to current statewide highway maintenance efforts.
2. The Bureau's review of current highway maintenance costs indicates serious deficiencies which will only increase with a larger and more complex road system to maintain.
3. Maintenance and operations costs will span the life of the facilities constructed and will increase over time. Additional infusions of capital will be necessary as the new structures experience "wear and tear".
4. The Commonwealth is already facing substantial infrastructure repairs and is currently heavily reliant on bonded indebtedness to finance infrastructure projects.
5. The remaining CA/THT project components that have yet to be designed will also have maintenance implications which as of this date have not been factored into the costs of the total statewide maintenance program.

Source of Funds for Construction

There is an obvious limit to the sources of funds needed to finish the construction of the project as well as to maintain it. The Bureau identified the following areas as current and/or potential sources of revenue for the project:

1. FHWA - USDOT

The Bureau believes that the maximum level of federal commitment has already been obtained for this project. If anything, the project faces the very real possibility of a cap on federal participation. If federal participation for CA/THT is "capped", then requirements for additional funding (over the current estimate of \$9.6 billion) will result in more state projects being placed in competition with the CA/THT project for the total allocation of federal funds to Massachusetts. The Interstate Surface Transportation Efficiency Act of 1991 ("ISTEA"), the current applicable federal aid law allows the states substantial flexibility for use of federal aid. Under this federal act, there is already the potential for other state projects to be downgraded in priority to the extent that substantial additional funds are needed to complete the CA/THT.

Under applicable federal legislation prior to ISTEA, there were specific categories of funding which had stated levels of federal reimbursement. Interstate completion money for example, was reimbursed at a 90-10 federal-state share. Under that designation, sections of the project were deemed not eligible by Federal Highway Administration ("FHA") including the section from High to Causeway Street, the Massachusetts Avenue interchange and the Route 1A interchange.¹ States now have more flexibility in using federal aid under ISTEA. Since the enactment of ISTEA, Massachusetts now has the flexibility to fund these sections that were not previously eligible for 90-10 reimbursements, however these funds must be diverted from other state projects.

¹Testimony of Peter Zuk, Project Director, CA/T Project (March 10, 1994).

The CA/THT Project Director testified on March 14, 1994, that the state's maximum exposure for funding on the project was \$1.4 billion, assuming a 2004 completion date.² According to MHD's finance plan dated December 30, 1994, Massachusetts had already committed \$515 million dollars for the period 1986-1994.³ According to that same document 89% of the project's federal funds had been interstate construction funds.

The most recent MHD finance plan indicated that \$4.384 billion in costs remained to be funded as of 12/30/94. Of that amount, the projected federal contribution was \$4.166 billion. Under this scenario, the Commonwealth will have to finance another \$118 million. The report also states that in order to complete the project funding commitments, \$922 million in additional federal funds will be required for the period 1998-2004.

Based on the MHD finance plan, the Bureau calculates that if those delays push the project cost above \$10.6 billion, even the MHD's most optimistic scenario for federal and state funding would fall short of meeting that cost. Assuming a five (5) percent inflation/escalation factor, the total current project costs approaches \$9.6 billion. Assuming an average state participation contribution of 15% , the total commitment for the Commonwealth assuming a \$9.6 billion project becomes \$1.557 billion (\$782 projected without inflation, + \$515 already committed, + \$270 inflation through 2004).

²Testimony of Peter Zuk, Project Director, CA/T Project, page 11 (March 14, 1995).

³Id. at 13.

The escalation last year to a \$9.6 billion total project cost from the previous projected \$7.7 billion, results in an additional cost to the Commonwealth of \$157 million, assuming a ratio of 85-15 federal/state dollars. (See attached Funding Allocation Scenario) Moreover, while the cost estimates make reasonable assumptions for escalation due to inflation, they do not appear to include allowances for delays which have already plagued the project. Further delays could have a serious impact on the project cost.

The current political climate in Washington speaks to scaling back of mega-projects - not expanding their scope. To the extent that Massachusetts is receiving a larger portion of federal highway money than other states, there may be moves to reduce Massachusetts' share.

2. State Funds

If Massachusetts is required to raise additional funds to supplement those already committed, the options for the state are limited.

- a. Broad based taxes - Gas Tax - The recent decision of the SJC in Mitchell v. Secretary of Administration & Finance, 413 Mass. 330 (1992) established that funds derived from the increase in the gas tax did not have to be used solely for road and bridge repairs. In Mitchell, the Supreme Judicial Court refused to invalidate the comptroller's transfer of funds from the highway fund in order to balance the Commonwealth's books. This allowance of the diversion of gas tax funds adds to the already strong political opposition to an increase in the gas tax by the motoring public and those constituencies that support additional funding for road and bridge repair.

- b. **Other state taxes** - Here again, the political will to raise a tax other than the gas tax will face the same opposition that the gas tax currently has - namely non-users of the CA/T being asked to pay for facilities they do not use.
- c. **User fees** - Of all of the options, user fees appear to have the least resistance in terms of the overall populace, since non-users of the public facility are not assessed for its use and maintenance. Another advantage of tolls is that they provide a steady stream of revenue that is clearly attractive to bonding and debt issuers. In addition, toll revenues can be easily adapted to fluctuating costs of the public facility.

The negatives include traffic congestion, travel delays and increased auto emissions. It is unclear whether new toll booths would need federal approval under the provision of the Clean Air Act or USDOT regulations. Certainly, the people who pay the tolls on a day to day basis form a vocal opposition to their implementation.

One potential option to reduce the opposition to the tolls would be to limit the tolls to one-way either exit or entry. New York has a one-way toll structures on bridges where entrants to the state are taxed, but vehicles leaving the state are not. The use of one way tolls on exit from Logan Airport through the Sumner Tunnel appears to have worked reasonably well.

The Bureau remains concerned that some of the costs which have received initial approval by FHA may subsequently be deemed non-reimbursable. For example, the Mystic Avenue property acquisition was originally slated for Federal reimbursement, only to later be deemed non-reimbursable due to MHD's failure to provide an adequate rationale linking it

with the Central Artery North Project. There are other reimbursement questions that remain on other particular components of the project. Changes in scope or lack of "connectivity" with the project, may result in other areas that may be "pink-slipped" by the FHA. The Bureau's examination of the property acquisition/business relocation process to date, strongly supports this notion.

The Bureau believes that there are other significant cost factors that need to be quantified and evaluated. For instance, the Project's 1992 annual cost estimate assumed "the cost as bid for all awarded construction contracts has been de-escalated." (Item #9 - 1992 cost estimate) The estimate also assumed that operation and maintenance costs will be offset by toll revenues. The Bureau found little documentation to support that assertion. In addition, the cost estimate for 1992 (dated July, 1993) excluded items such as the following:

- o MHD and FHA overhead
- o Massachusetts sales tax
- o regional transit mitigation
- o provisions for completion of CANA project
- o cost of Rutherford Avenue
- o Regional operations control center

These items are clearly costs, and need to be quantified as best as possible. The Bureau believes that a full exploration of their total cost is critical to any funding debate.

3. Operation and Maintenance Issues

The Bureau evaluated the operation and maintenance issues of the project in the context of the MTA acting as the operator. The Bureau remains concerned that as other changes and construction delays occur, additional mitigation measures may be needed. For example, timing and coordination issues with MWRA's outfall and Combined Sewer Overflow ("CSO") issues may impact the CA/THT project in the

Fort Point Channel Area. MWRA estimates that four recommended CSO projects worth approximately \$26 million dollars are located in the immediate area of Fort Point Channel.

Who Should Operate the CA/THT Facilities?

The Massachusetts Turnpike Authority

The Massachusetts Turnpike Authority ("MTA") was created by Chapter 354 of the Acts of 1952. The enabling legislation was passed with an emergency preamble. The original legislation established numerous powers and duties including, but not limited to construction, reconstruction, maintenance and repair of the Massachusetts Turnpike (the "Pike") and any parts thereof.⁴ Section 17 of the original act also provided for the transfer of the Pike to the Commonwealth, i.e. the Department of Public Works ("DPW"), if the bonds were retired, and if DPW determined that the Pike was in good condition.

Tunnels

The idea of the MTA running the harbor tunnels is not new. Six years after the MTA was established, the Legislature enacted legislation (c. 598 of 1958) providing that the MTA would oversee the construction of another harbor tunnel. That act, which was also declared to be an emergency law, conferred upon the MTA the power and duty to construct an additional tunnel from Boston proper to East Boston. Section 16 of c. 598 also provided that if all bonds were retired, the tunnels "if then in good condition and repair to the satisfaction of the state DPW, shall become part of the state highway system and shall be maintained by the Department free of tolls".

In 1967, the General Court enacted c. 557 of that year which mandated a study by the MTA relative to the feasibility of constructing a third harbor tunnel. That study was to

⁴C. 354 of the Acts of 1952, s. 5(e).

include traffic and engineering studies and was to be financed with a \$200,000 appropriation from the highway fund.

In 1985, as part of the Transportation Bond Issue,⁵ the General Court authorized the Secretary of the Executive Office of Transportation and Construction ("EOTC") to undertake a study for purpose of recommending a method or methods by which the Commonwealth could finance its share of the CA/THT project. EOTC's financial consultant Lazard Frère recommended MTA become operator of the project.

MTA Finances

According to the State Auditor, during calendar year 1993, the MTA received a total of \$162,092,642 in revenues from tolls, rentals, concessions, and other income. Operating expenses were listed as \$76,757,611 for the same period leaving \$85,335,031 distributed to the bond interest account, the replacement reserve account, the bond reserve account and the bond redemption account.

A 1991 Inspector General report noted that under its present (i.e. 1991) bond retirement schedule, the Pike could be out of business by 1995.⁶ In 1993 however, the MTA embarked on a major capital outlay program to reconstruct and modernize the Pike. In accord with that program, the Pike issued bonds totaling \$365.5 million.⁷ (In 1986, the Pike had also embarked on a \$236 million, 6 year capital improvement plan.)

The Bureau has not yet analyzed whether there was a demonstrated need for all of the repairs and reconstruction included in the expansion of MTA's capital outlay for 1993. The Bureau notes that much of the turnpike extension including the bridges that cross over the

⁵C. 811 of the Acts of 1985. s. 28.

⁶ Inspector General's 1991 report. page 21.

⁷State Auditor's report, Dec. 15, 1994, page 2.

turnpike have recently or are currently being rebuilt. The extension should not require significant additional maintenance in the short to mid-term.

Maintenance

The Bureau believes MHD does not currently have the capacity to take over the existing two tunnels and the CA/THT. The Bureau's review of a Motorist Aid Call Box Contract and MHD's privatization of highway maintenance contracts revealed serious deficiencies in MHD's ongoing maintenance programs. In addition to a depletion of professional staff and engineering resources, there has been a steady drop in the percentage of resources committed to maintenance efforts. Currently, MHD has neither the staff nor the financial resources to assume the maintenance of the existing turnpike and tunnels. If anything, the Bureau's reviews has showed a continued deferral in existing maintenance and the elimination of capital preserving measures from ongoing maintenance operations. MHD in its current funding/staffing condition, is in no position to take on the comprehensive maintenance operations of the existing Turnpike facilities, let alone all of the any additional maintenance responsibilities associated with the CA/T project.

Financial

The financial condition of the Pike as viewed over the last 5 calendar years is stable. The attached analysis from the MTA's annual report shows steady increases in toll income with fairly stable income from the ancillary services provided, i.e. restatements, concessions and rentals. (See Appendix 1)

4. Other Potential Revenue Sources for Operation and Maintenance

- a. **Massachusetts Port Authority** - The Bureau's examination of selected contracts and expenses of the Massachusetts Port Authority ("MPA") indicates that it has excess financial capability. The Bureau found that MPA has

significant funds that have been used to finance questionable travel, entertainment and promotions, as well as payment of debts incurred by entities such as Sail Boston and other groups involved with tourism and conventions. The Bureau's review found numerous areas of spending by the MPA that should have been targeted to more productive pursuits.

The Bureau found that a substantial portion of the CA/T project directly benefits Massport. Much of the improved access to the seaport and the airport is a direct benefit to Massport. Substantial construction projects and expensive mitigation efforts also directly benefit Massport and were designed to do so.

The Bureau believes that Massport has substantial unrealized potential to generate additional funds. Not only is the toll on the Tobin Bridge the same as when the bridge first opened, but parking, concessions and leases of Massport provide significant potential for additional revenue.

- b. **The MBTA** - The T may also be considered a minor contributor to the funding picture. The state's contribution to the funding of the MBTA's operating deficit is substantial and growing. Fares provide substantially less than 40% of the funds needed to operate the T. In addition, while proposition 2½ has capped assessments on the member municipalities of the MBTA district, the state's share of the operating deficit has continued to grow.

As the Mitchell case highlighted, the MBTA is the beneficiary of gas tax revenues. The T is also a direct beneficiary as well as an integral component of the CA/T project.

The Bureau recognizes that T fare increases raise additional concerns including the environmental impact process and reduced ridership. The Bureau

believes however that each transportation agency related to this project must be scrutinized for additional sources of funds and operational support.

The Bureau believes that all of these potential revenue sources have corresponding drawbacks and opposition. The Bureau simply delineates these options because it is apparent that substantial additional state funds are needed to maintain the project once completed. The Bureau believes that additional funding sources are clearly needed and that it would be disingenuous of any administration to imply otherwise.

Maintenance Considerations

The maintenance and operations costs of the CA/THT facilities when completed will be substantial. According to information obtained from the project, the following are selected operational and maintenance costs of the Third Harbor Tunnel that have been projected by B/PB:

<u>Description</u>	<u>Cost</u>
1. Operations: staffing (81 employees)[annual]	\$3,675,000
2. Maintenance: staffing (39 employees)[annual]	\$1,904,000
3. Operations: <u>annual</u> materials and expenses	\$1,976,355
4. Maintenance: <u>annual</u> materials and expenses	<u>\$2,213,000</u> ⁸
TOTAL:	<u>\$9,768,355</u>

In addition, there are other costs which have been identified, which require additional funding such as \$609,000 in vehicle costs, \$1,973,000 in maintenance vehicle costs and \$379,698 for furniture fixtures. Some of these additional costs have annual financial implications as well.⁹

⁸CA/T 1994 Operations Plan Third Harbor Tunnel, Appendix 3, pp. 35-37

⁹Id. at 35-37.

According to the operations plan, the role of maintenance is as follows:

'The role of maintenance is to ensure that design, construction and operation of the CA/T project incorporate essential maintenance principles for both equipment and roadway facilities...Equipment maintenance addresses the Project's mechanical and electrical systems, and the IPCS Roadway facilities to be maintained include at grade highway sections, viaducts, boat sections, bridges and tunnels as well as ventilation, building, state police facility, E. Boston toll facilities, nine emergency stations and platforms, satellite maintenance facilities and pump stations.'¹⁰

The Bureau believes that these maintenance costs, while certainly important are also substantial. The Bureau has not determined the need for all of the expenditures or personnel, but notes the analysis of the existing two toll facilities as Sumner & Callahan as a means of comparison. (See Appendix 2) As can be seen, the total operations expenses for the tunnels was \$9.1 million in calendar year 1994 and \$9.7 million in 1993. This figure can be contrasted with the substantial projected annual costs of the Third Harbor Tunnel listed above.

Total System Maintenance Costs

The Bureau has even greater concerns when it analyzes the entire system maintenance plan. According to the Lazard Frères report completed in November, 1990, maintenance costs were estimated as follows:

'For example, based on an assumed five-percent inflation assumption, the annual operating and maintenance costs of the entire system (including the Project, the Extension, Sumner, Callahan and CANA will be approximately \$104 million inflated dollars by 1998.'

Obviously, this estimate was based upon an earlier operations date and may have assumed a larger than actual inflation rate. Nevertheless, the above referenced maintenance costs as estimated in 1990 were in the range of \$100 million dollars. If the actual operational

¹⁰1994 Operations Manual, page 22.

and maintenance costs do approach \$100 million, then they are certainly substantial when viewed in the context of the total revenues of the entire Massachusetts Turnpike system from the New York state line to Boston. (Total revenue for the Turnpike was: \$150,161,746 for 1994.)

The Lazard study assumed that if MTA were to assume maintenance of the CA/THT, it would be able to cover those costs because its own reconstruction program would be complete.

'Since this reconstruction program [\$600 million Critical Needs Program] should be nearly complete by the time the Project is ready for full operation, it should be possible for the Turnpike Authority to absorb the new operating maintenance responsibilities for the complete system.'¹¹

The Bureau does not believe that these assumptions are valid under current conditions. While there would certainly be economies of scale that would reduce some of the costs, the Bureau is not persuaded that MTA is able to simply absorb all of the operation and maintenance given the numbers that are available at this point.

With no toll increase scheduled, it is clear that there would be no additional revenue that the project would gain absent a significant reduction of expenses at the Pike. The Bureau believes that gross toll revenues would be the same once the Third Harbor Tunnel opens because there would be few, if any, new users. The effect of adding the new tunnel is to have the total number of users remain the same, but utilize three instead of two facilities. As already identified, the costs of maintenance and operation of a new tunnel would be significant, and would be in addition to those already incurred by the two existing tunnel facilities. Without an increase in tolls or another sizeable revenue source, there could in fact

¹¹Lazard Frère's Report, page 107.

be a deficit because there would be more facilities to operate with no increase in total revenues.

Conclusions and Recommendations

Costs of the Project

The speculation about the total cost of the project will continue. The Bureau does not believe that the Commonwealth is well served by commitment to an arbitrary cost ceiling. The Bureau is concerned that such a commitment brings pressure to shift costs to other items or agencies or to downplay and underestimate the true cost of a particular component of the project. Moreover, a commitment to a particular cost ceiling may cause valuable transportation components of the project to be jeopardized, such as the elimination of ramps or neighborhood mitigation measures. The Bureau is concerned that the project consultants may be cutting costs in the wrong areas in order to avoid the unpopular step of raising the project cost estimate further. The Bureau believes that rather than eliminating ramps or other important "quality of life features", MHD should first examine its administrative costs, B/PB subcontracted costs and other previously documented areas of waste and inefficiency. A renewed commitment to the value engineering process is also a necessity.

Given a project of this magnitude, it is not surprising that overruns have occurred and will continue to occur. Major construction and excavation in the tideland area of Boston is bound to have cost increases as unforeseen conditions develop. As the Bureau's oversight of the harbor cleanup has demonstrated, one only need to look at the MWRA's experience with the tunnel boring machines in the 9½ mile outfall tunnel as well as the inter-island tunnel to highlight the uncertainties that can arise in underground construction. Recognizing that these additional costs are inherent to projects of this magnitude, is part of the public education role that project management must assume.

The Bureau believes that the legislature and the public must have a full, accurate and understandable disclosure of costs so that comprehensive and well reasoned solutions can be proposed. The failure to fully disclose all component costs of the project on an ongoing basis only creates mistrust among those who must ultimately finance it, the taxpayers of Massachusetts.

Based upon its' review, the Bureau recommends the following:

1. That a complete review of all projected maintenance costs of the project be completed by the Bureau and that all ancillary costs of operation of the new facilities be estimated and presented to the legislature.
2. That MHD and CA/T prepare quarterly reports on cost estimate figures that identify all known and projected costs, as well as a detailed rationale for each of the estimates.
3. That MHD and the CA/T quantify all of the items currently excluded from project cost estimates, including, but not limited to sales taxes, hazardous materials handling, employees on various state agency and authority payrolls, as well as all items now reasonably anticipated for mitigation.

Massachusetts Turnpike Historical¹²

	<u>1990</u>	<u>1991</u>	<u>1992</u>	<u>1993</u>	<u>1994</u>
Toll Revenue	121,355,743	123,362,161	127,038,966	129,821,892	133,280,464
Restatements/ Concession	2,835,261	2,685,951	2,817,789	2,748,003	2,716,869
Service Stations	1,914,880	1,787,657	2,227,443	2,484,566	2,729,158
Rental Income	2,816,016	2,913,290	4,558,885	4,031,792	4,154,804
INVESTMENT INCOME:					
Restructured funds	4,217,036	3,014,998	1,852,146	4,892,979	6,369,676
Revenue funds	1,054,411	934,586	813,123	854,599	913,775
Total Revenues	<u>134,193,347</u>	<u>134,725,913</u>	<u>139,358,352</u>	<u>144,833,831</u>	<u>150,161,746</u>
Total Expenses	<u>54,350,208</u>	<u>59,664,915</u>	<u>63,219,452</u>	<u>66,968,896</u>	<u>70,326,565</u>
REQUIRED DISTRIBUTION:					
Sinking fund:					
Bond Interest	8,495,145	7,167,106	6,113,498	3,098,547	1,823,185
Bond Redemption	23,005,672	21,904,407	27,972,656	27,273,371	21,210,751
Repair and Reconstruction Fund	40,000,000	45,000,000	41,000,000	44,300,000	48,260,000
Total Distributions	<u>71,500,817</u>	<u>74,071,513</u>	<u>75,086,154</u>	<u>74,671,918</u>	<u>71,293,936</u>

**SUMNER-CALLAHAN TUNNELS—STATEMENTS OF REVENUES, EXPENSES,
REQUIRED DISTRIBUTION AND CHANGE IN REVENUE FUND
FOR THE YEARS ENDED DECEMBER 31, 1994 AND 1993**

	1994	1993
REVENUES (NOTE 3)		
Net Toll Revenue	\$ 16,236,669	\$ 16,156,331
Rental Income	187,546	186,690
Other Income		
Restricted Funds and Accounts	971,727	881,279
Revenue Funds	<u>39,721</u>	<u>34,511</u>
Total Revenues	<u>17,435,663</u>	<u>17,258,811</u>
EXPENSES (NOTE 3)		
Operations and Public Protection	7,233,562	8,037,428
Administrative	1,380,424	1,176,320
Retirement	<u>493,182</u>	<u>574,967</u>
Total Expenses	<u>9,107,168</u>	<u>9,788,715</u>
Net Revenues Before Required Distribution	8,328,495	7,470,096
Restricted Revenues	<u>(1,159,273)</u>	<u>(1,067,969)</u>
Net Revenues Available for Distribution	7,169,222	6,402,127
REQUIRED DISTRIBUTION		
TRANSFERS TO RESTRICTED FUNDS AND ACCOUNTS (NOTE 3)		
Debt Service Fund	4,488,974	4,506,531
Repair and Reconstruction Fund Mandated per		
Trust Agreement	1,259,708	3,110,500
General Funds Account	1,030,452	(2,185,709)
Insurance Account	<u>175,000</u>	<u>175,000</u>
Total Distribution	<u>6,954,134</u>	<u>5,606,322</u>
Net Change in Revenue Funds Retained for Tunnel		
Operating Purposes	<u>\$ 215,088</u>	<u>\$ 795,805</u>

See accompanying notes.

Figure 15 - FHWA Funding Allocation Beyond 1997 - Minimum Case Scenario

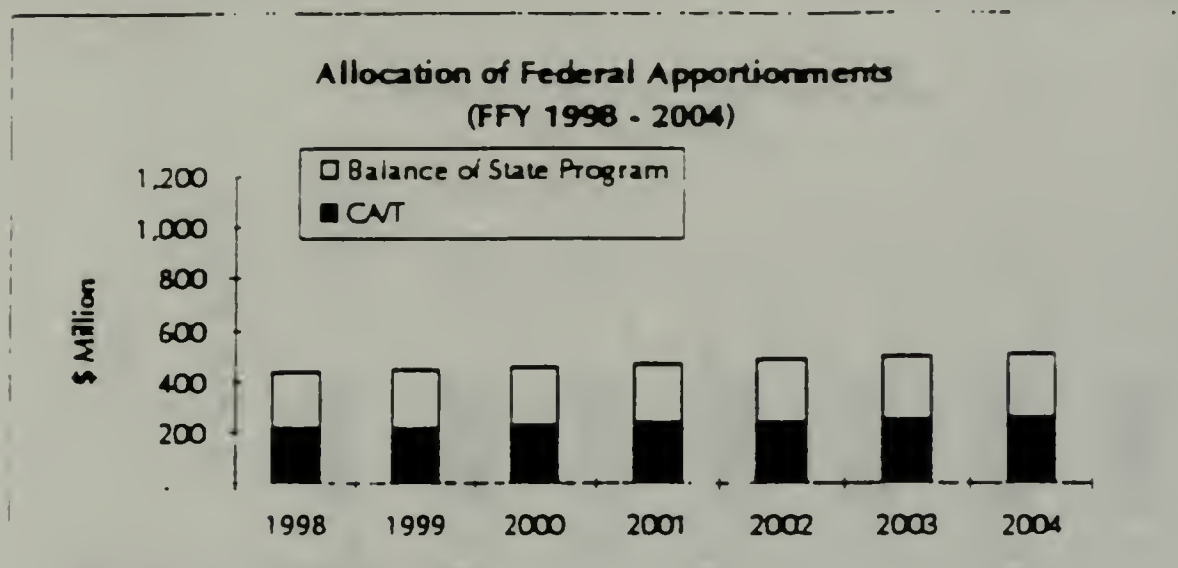
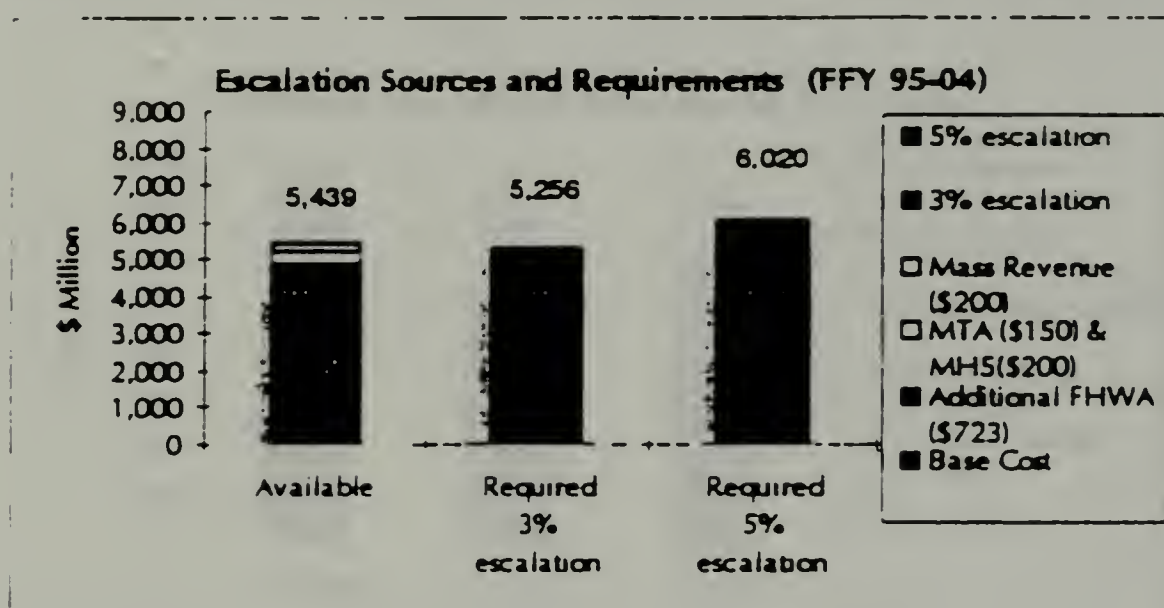


Figure 16 - Escalation Sources and Requirements - Minimum Case Scenario



"Maximum Case" scenario: The basic funding assumption is that Federal Aid Programs in existence at the end of 1997 would continue throughout the life of the project (2004). It assumes the existence of the same programs outlined in the "minimum funding" scenario and continues the applicability of the "Hold Harmless" and "Interstate Reimbursement for Segments of the Interstate System Constructed Without Federal Assistance" Federal Aid programs. NO NEW FEDERAL AID PROGRAM SOURCES HAVE BEEN INCLUDED. In addition it recognizes that the Federal Government in all likelihood will continue to increase its apportionment to the transportation improvement programs as evident through its actions over the last 10 years (based on FHWA Highway Statistics book of 1992).

Using these assumptions the State could expect approximately \$1,029 million per year for the years 1998 through 2004. Consistent with other scenarios 50% would be used for the balance of the State programs and 50% would be applied to the Central Artery/Tunnel project. This level of CAVT Project financing would fully fund the Project's base need and leave approximately \$2,680 million to cover escalation and other cost exposures as portrayed in Figures 17 and 18.

Figure 17 - FHWA Funding Allocation Beyond 1997 - Maximum Case Scenario

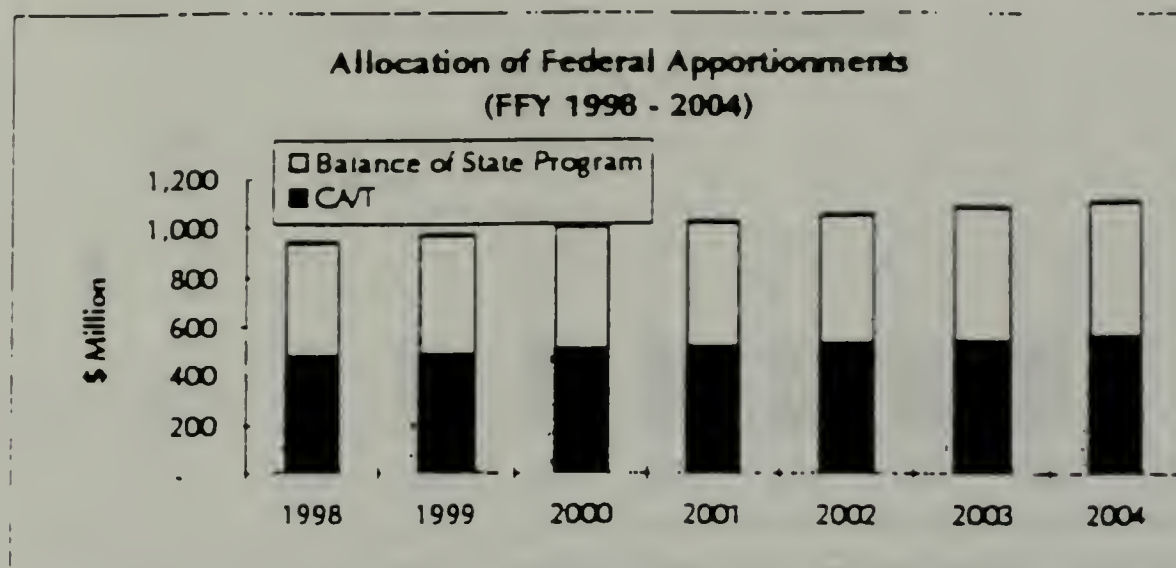
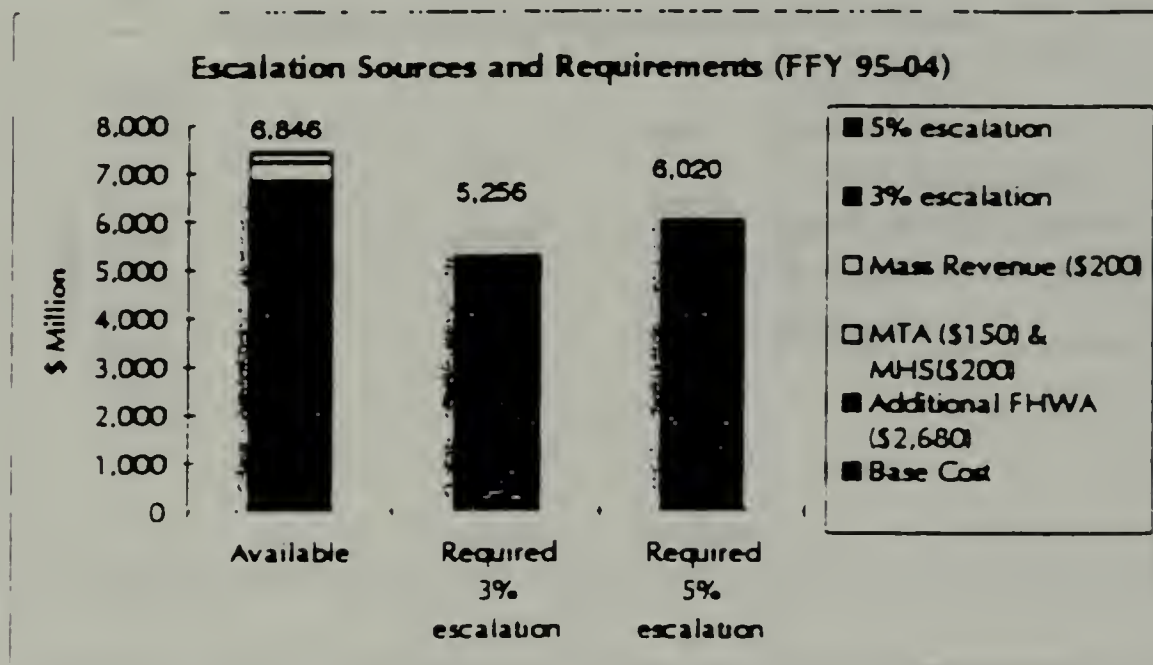


Figure 18 - Escalation Sources and Requirements - Maximum Case Scenario



"Most Likely" scenario: The main assumption in this funding scenario, is that the annual funding level beyond 1997 and through Project completion in 2004 equals that of the last year of the current ISTEA Bill.

Using the above assumption, the State could expect to receive approximately \$740M each year from 1998 until 2004. Like the other scenarios, 50% of the State apportionment will go to the balance of the State Transportation Programs, and 50% will go to the CAV Project. This level of federal participation will support a Statewide Transportation program of approximately \$500 to \$600M, which is higher than the current program of \$400M. This funding level results in a Federal Aid surplus of \$1,668 million to cover costs related to escalation and other unforeseen changes (Figures 19 and 20).

Figure 19 - FHWA Funding Allocation Beyond 1997 - Most Likely Case Scenario

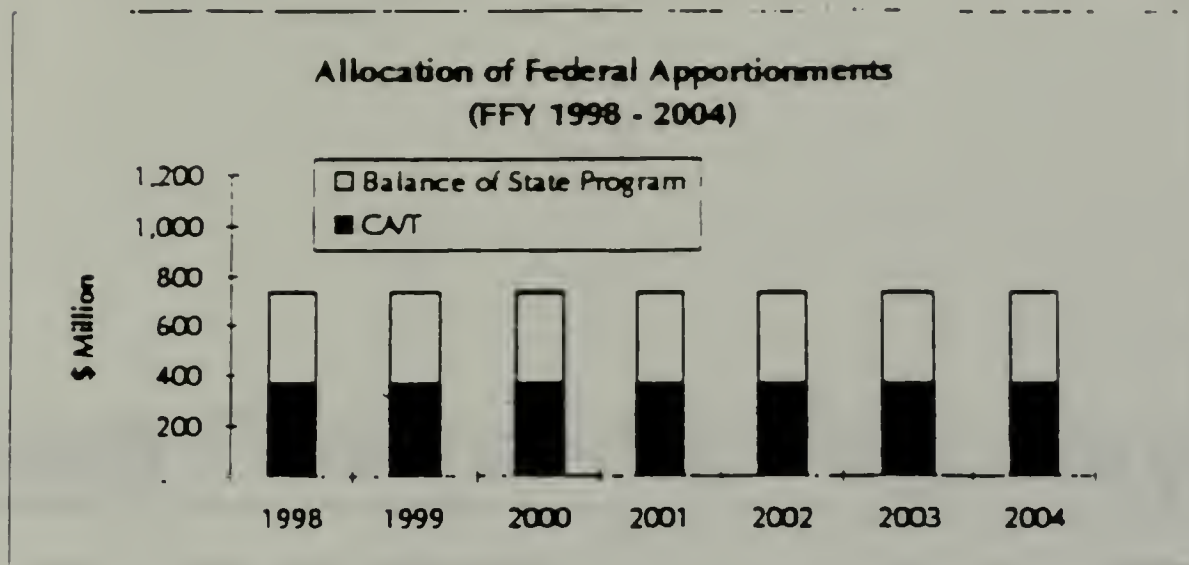
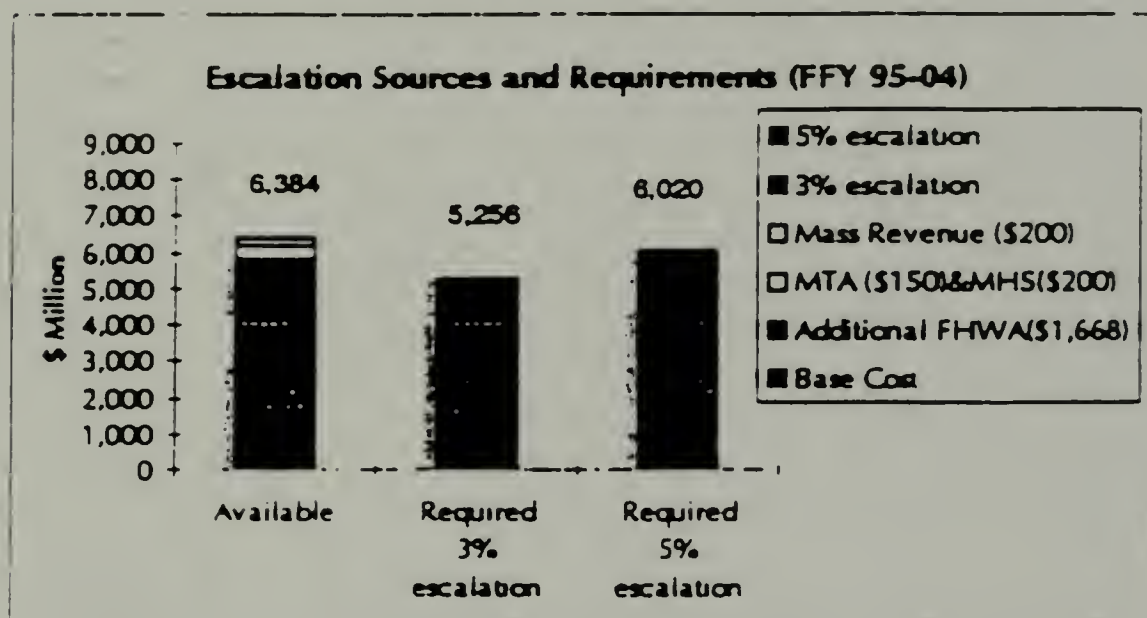


Figure 20 - Escalation Sources and Requirements - Most Likely Case Scenario



In conclusion, the CAVT Project is expected to receive the necessary funds to cover its base scope. Depending on which scenario prevails, the Project could expect funding that would support up to 5% escalation and unforeseen scope changes. In addition, the CAVT Project continues to pursue other funding sources as a supplemental support in case the Project encounters unanticipated cost growth.

It is incumbent on Federal and State officials to legislate necessary language to support this Project, the largest highway project the FHWA has undertaken since its establishment. Figure 21 summarizes the three funding level scenarios and two escalation levels.

Financing Federal-Aid Highways

Publication No. FHWA-PL-92-016

May 1992

Appendix B: Authorizations

(millions)

PROGRAM	1992	1993	1994	1995	1996	1997	TOTAL
Title 1—Surface Transportation							
Interstate Construction Program	1,800.00	1,800.00	1,800.00	1,800.00	0.00	0.00	7,200.00
Interstate Substitute Program	240.00	240.00	240.00	240.00	0.00	0.00	960.00
Interstate Maintenance Program	2,431.00	2,913.00	2,914.00	2,914.00	2,914.00	2,914.00	17,000.00
National Highway System	3,003.00	3,599.00	3,599.00	3,599.00	3,600.00	3,600.00	21,000.00
Surface Transportation Program	3,418.00	4,096.00	4,096.00	4,096.00	4,097.00	4,097.00	23,900.00
Congestion Mitigation and Air Quality Improvement Program	858.00	1,028.00	1,028.00	1,028.00	1,029.00	1,029.00	8,000.00
Bridge Program	2,288.00	2,762.00	2,762.00	2,762.00	2,763.00	2,763.00	16,100.00
Federal Lands Highway Programs:	371.00	445.00	445.00	445.00	447.00	447.00	2,600.00
Indian Reservation Roads	(159.00)	(191.00)	(191.00)	(191.00)	(191.00)	(191.00)	(1,114.00)
Public Lands Highway	(143.00)	(171.00)	(171.00)	(171.00)	(172.00)	(172.00)	(1,000.00)
Parkways and Park Highways	(69.00)	(83.00)	(83.00)	(83.00)	(84.00)	(84.00)	(486.00)
Donor State Bonus Amounts	429.00	514.00	514.00	514.00	514.00	515.00	3,000.00
Reimbursement for non-federally aided Interstate Segments	0.00	0.00	0.00	0.00	2,000.00	2,000.00	4,000.00
Hold Harmless*	606.60	606.60	606.60	606.60	606.60	606.60	3,639.60
90% of Payment Adjustments*	0.00	83.00	83.00	83.00	83.00	83.00	415.00
Additional Allocation—Wisconsin	40.00	47.80	47.80	47.80	47.80	47.80	279.00
Highway Use Tax Evasion Projects	5.00	5.00	5.00	5.00	5.00	5.00	30.00
Highway Use Tax Evasion Projects—GF	2.50	2.50	2.50	2.50	2.50	2.50	15.00
Scenic Byways Program	1.00	3.00	4.00	14.00	14.00	14.00	50.00
Interim Scenic Byways Program	10.00	10.00	10.00	0.00	0.00	0.00	30.00
Ferry Boat and Facilities Construction	14.00	17.00	17.00	17.00	17.00	18.00	100.00
Emergency Relief	100.00	100.00	100.00	100.00	100.00	100.00	600.00
Arkansas Traffic Control Device	1.20	0.00	0.00	0.00	0.00	0.00	1.20
Minimum Allocation*	1,160.00	803.40	803.40	803.40	803.40	803.40	5,177.00
Projects:	542.62	1,225.46	1,158.85	1,100.52	1,100.52	1,100.52	6,228.49
High Cost Bridge Projects	(22.82)	(52.48)	(52.48)	(52.48)	(52.48)	(52.48)	(285.20)
Congestion Relief Projects	(39.20)	(90.17)	(90.17)	(90.17)	(90.17)	(90.17)	(490.04)
High Priority NHS Corridors	(94.65)	(270.99)	(204.38)	(204.38)	(204.38)	(204.38)	(1,183.16)
Rural Access Projects	(73.65)	(169.40)	(169.40)	(169.40)	(169.40)	(169.40)	(920.63)
Urban Access and Mobility Projects	(44.49)	(102.32)	(102.32)	(102.32)	(102.32)	(102.32)	(556.10)
Innovative Projects	(232.85)	(459.71)	(459.71)	(401.38)	(401.38)	(401.38)	(2,365.41)
Priority Intermodal Projects	(34.96)	(80.40)	(80.40)	(80.40)	(80.40)	(80.40)	(436.95)
High Priority NHS Corridor Studies	8.00	8.00	8.00	8.00	8.00	8.00	48.00
High Priority NHS Corridor Revolving Fund	0.00	40.00	40.00	40.00	40.00	40.00	200.00
Infrastructure Awareness Education Program	2.00	0.00	0.00	0.00	0.00	0.00	2.00
Safety Belts and Motorcycle Helmets	17.00	Continues as \$24 million drawdown from sec. 402 for 93–94					17.00
Trauma Study	(5.00)	0.00	0.00	0.00	0.00	0.00	(5.00)
FHWA Highway (402) Safety Program	17.00	20.00	20.00	20.00	20.00	20.00	117.00

* Estimated amounts.

Appendix G: Federal Share and Availability for Significant Programs

PROGRAM	FEDERAL PERCENT SHARE	AVAILABILITY YEARS
Interstate Construction	90	1*
Interstate Substitution	85	2*
Interstate Maintenance	90	4
National Highway System	80	4
Surface Transportation Program	80	4
Congestion Mitigation and Air Quality Program	80	4
Bridge Replacement and Rehabilitation Program	80	4
Federal Lands	100	4
Toll Roads	50-80	N/A
Transit Capital		
Section 3	80	Until Expended
Section 9	80	4
Section 18	80	3
Section 16(b)(2)	80	1
Transit Operating	50	4
National Magnetic Levitation Prototype	75-90	Until Expended
National High-Speed Ground Transportation Technology Demonstration	80	Until Expended
Demonstration Projects	80	Until Expended
Highway Safety Programs	80	4
Motor Carrier Safety Assistance	80	Secretary—Until Expended; States—2 years
IVHS Corridors Program	80	Until Expended

* Last year of authorization available until expended.

